

## CLAIMS

1. A speaker apparatus comprising:  
a transducer for transducing an input electric signal into mechanical  
5 vibration; and  
a diaphragm for transducing the mechanical vibration into a sound  
signal;  
wherein a single diaphragm is provided with a plurality of the  
transducers, and the single diaphragm is provided with a plurality of  
10 independent signal control points corresponding to the respective transducers.
2. The speaker apparatus according to claim 1, wherein a sound signal  
processing portion that is able to individually control the input electric signal  
to the respective transducers is installed, and an electric signal including a  
15 sound signal component for outputting a signal at the signal control point  
corresponding to the respective transducers and a sound interference  
canceling signal component for canceling an interference with the transducers  
serving as the other signal control points is provided, thereby making it  
possible to stereophonically reproduce a plurality of channels by the single  
20 diaphragm.
3. The speaker apparatus according to claim 1 or 2, wherein the input  
electric signal to the respective transducers includes an interference sound  
signal component for causing an interference between signal outputs from the  
25 plurality of the signal control points so as to localize a sound image in an  
arbitrary point.
4. The speaker apparatus according to claim 3, wherein the interference  
sound signal includes information for controlling a sound pressure  
30 distribution so as to control directionality of the sound image.
5. The speaker apparatus according to claim 4, wherein the interference

sound signal includes a frequency characteristics correcting signal for correcting and adjusting frequency characteristics of an interference sound with respect to an arbitrary listening position and listening direction.

5     6.     The speaker apparatus according to claim 3, wherein the points in which the sound image is to be localized are arranged around a listener so as to achieve a surround stereo system.

7.     The speaker apparatus according to one of claims 1 to 6, wherein the  
10     diaphragm extends over an entire surface of a desired speaker array and is provided with the transducers whose number is the same as that of the signal control points of the desired speaker array.

8.     The speaker apparatus according to one of claims 3 to 6, wherein the  
15     diaphragm extends over an entire surface of a desired speaker array, and the sound images are localized in positions of the signal control points of the desired speaker array.

9.     The speaker apparatus according to one of claims 3 to 6, wherein the  
20     transducers are arranged in a peripheral portion of the diaphragm.

10.    The speaker apparatus according to claim 9, wherein the diaphragm is formed of a transparent material.

25     11.    The speaker apparatus according to claim 10, wherein the diaphragm is attached to a front surface of a display of a monitor.

12.    The speaker apparatus according to claim 11, wherein the transparent material has function as a display filter for reducing a reflection of external  
30     light and blocking electromagnetic waves.

13.    The speaker apparatus according to one of claims 1 to 6 that is

integrated with a keyboard.

14. A speaker apparatus comprising:  
a transducer for transducing an input electric signal into mechanical  
5 vibration; and  
a diaphragm for transducing the mechanical vibration into a sound  
signal;  
wherein a single flat-panel diaphragm is provided with a plurality of  
the transducers, and the single flat-panel diaphragm is provided with a  
10 plurality of independent signal control points corresponding to the respective  
transducers.